U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Office of the Regional Administrator

P. O. Box 92007
Los Angeles, CA 90009-2007

SEP 2 5 2007

Mr. James S. Adams, MA
Environmental Office, MS 40
California Energy Commission
1516 9th Street
Sacramento, CA 95814-5504

Dear Mr. Adams:

Subject: Russell City Energy Center Impact on Hayward Executive Airport

In our letter of September 18, 2007, we stated that the Flight Standards Division of the FAA Western-Pacific Region expressed concern that the thermal plumes from the heat recovery steam generator stacks and cooling towers associated with the Russell City Energy Center (RCEC) could present a hazard to aircraft in the Hayward Executive Airport flight pattern for runway 10R/28L.

The basis for this conclusion is the January 2006 FAA study, Safety Risk Analysis (SRA) of Aircraft Overflight of Industrial Exhaust Plumes (DOT-FAA-AFS-420-06-1). The study identified the risk to an aircraft flying through an industrial plume to be 1×10^{-9} or less. The Target Level of Safety for General Aviation aircraft is 1×10^{-7}. The study concluded that, "the likelihood of an accident or incident associated with industrial plumes is deemed acceptable without restriction, limitation, or further mitigation." The SRA went on to advise that to further lower the already acceptable risk pilots should avoid over flight of industrial plumes at less than 1000 feet above the exhaust stack.

The proposed RCEC site is located 1.56 miles southwest of Hayward Executive Airport. The original letter stated that the traffic pattern for runway 10R/28L extends to 1.5 miles abeam the airport. This distance is determined from FAA Order 7400.2, Procedures for the Handling of Airspace Matters, which requires the FAA to protect airspace to that distance from the adverse impact of structures. While exhaust plumes do not meet the definition of a structure, the above-cited SRA provides the only guidance Flight Standards has regarding plumes.

The standard visual air traffic pattern for a B category airport, such as Hayward Executive Airport, is 1.0 miles with a 0.5 mile buffer. Radar track data confirms that the majority of aircraft in the visual pattern operate at the 1.0 mile standard. The pattern can flex to 1.5 miles depending on the number of aircraft in the pattern and speed of the aircraft. Radar data and visual observation by a Flight Standards Aviation Safety Inspector revealed that a small, but quantifiable number of aircraft transit the proposed RCEC site. Most of the

aircraft flying over the site do so on departure from or arrival to the airport. When in visual weather conditions, these aircraft are instructed to remain below 1000 feet while east of the San Francisco Bay shoreline. It should also be noted that the proposed RCEC site is in the recommended departure quadrant for helicopter traffic operating out of the Hayward Executive Airport.

The recommended mitigation to see and avoid the plumes when operating below 1000 feet is not reasonable for aircraft operating in a traffic pattern. Arriving and departing aircraft have more opportunity to see and avoid the RCEC. However, pilots departing from the airport will be climbing in a nose-high attitude and could be pre-occupied configuring the aircraft for climb. Visually acquiring the RCEC will be problematic.

The September 18th letter referenced the Notice to Airmen (NOTAM) for Temporary Flight Restrictions (FDC 4/0811). This NOTAM advises that in the interest of national security, pilots should avoid the airspace above, or in proximity to power plants. The Western-Pacific Flight Standards Division has subsequently obtained further guidance from FAA headquarters that this NOTAM that does not apply to aircraft departing from or arriving to an airport.

Per the FAA's SRA, inadvertent flight through an exhaust plume has a low risk of catastrophic results. Nonetheless, the SRA recommends that pilots avoid flight through industrial plumes below 1000 feet. Flight Standards maintains its original position that it is not reasonable to expect pilots in a visual traffic pattern to see and avoid a plume located under the pattern. Seeing and avoiding the RCEC plumes while arriving and departing from Hayward Executive Airport is feasible, but poses additional workload on the pilot at a critical time of flight.

The proponent offered a series of recommendations for pilot education regarding the RCEC, as listed in the TRANS-10 document. We would like the opportunity to include changes to this list for the Commission's consideration in its deliberation.

Should you need any assistance or have any questions, please contact Mr. David Butterfield, Aviation Safety Inspector, Flight Standards Division at (310) 725-7230.

Sincerely,

William C. Withycombe

William C. Withycombe
Regional Administrator

cc: Paul Kramer, Jr., CEC
CH2M Hill

September 25, 2007

The following changes to the RCEC Traffic and Transportation **TRANS-10** are recommended by the Western-Pacific Region, Flight Standards Division:

First item: *Request that a Notice to Airman (NOTAM), category D, be issued advising pilots of the location of the RCEC and maintained in active status until all navigation charts and the Airport Facilities Directory (AFD) have been updated.*

Second item: *Request that the Hayward Executive Airport Air Traffic Control Tower (ATCT) coordinated with the Northern California Terminal Radar Approach Control to ensure that local missed approach instructions preclude the vectoring of aircraft over the RCEC.*

Third item: No changes

Fourth item: *Request that the Hayward ATCT add a new remark to the Automatic Terminal Information Service (ATIS) advising pilots of the location of the RCEC and to avoid overflight below 1000 feet.*

Fifth item: Already deleted

Sixth item: No changes

Seventh item: *Modify the Hayward Executive Airport "fly friendly" pilot guides at the project owner's expense to include: a graphical/pictorial depiction of the RCEC site, bearing and distance to the site from airport center and the OAKLAND VORTAC, latitude and longitude of the RCEC center point, and the recommendation to avoid overflight of the site below 1000 feet to avoid potentially unstable flight conditions.*

Eighth item: Install *obstruction* lighting and marking on each RCEC exhaust stack *and cooling tower. Reference FAA Advisory Circular 70/7460-1 for guidance.* Install lights at each corner of the fence line that would be visible to an aircraft in flight, to be operated 24 hours a day, 7 days a week.

Ninth item: *Provide* the Hayward Executive Airport and the Metropolitan Oakland International Airport Air Traffic Control Towers *(ATCT) written notice* at least 10 days in advance of the first test or commissioning procedure that would produce a thermal plume, *provide verbal notification 2 hours in advance of any subsequent test or commissioning procedure, and 10 days written notice prior to the start of commercial operations.*

Verification: *(1). At least 6 months prior to the first test or commissioning procedure, the owner shall coordinate with the Hayward Executive Airport manager that changes to San Francisco VFR Terminal Area Chart have been submitted.*

(2). At least 60 days prior to the first test or commissioning procedure, the owner shall coordinate with the Hayward Executive Airport manager that the changes to the AFD have been submitted.

(3). At least 60 days prior to the first test or commissioning procedure, the owner shall verify with the Hayward Executive Airport and ATCT that any necessary modifications to local missed approach procedures have been coordinated with Northern California Terminal Radar Approach Control.

(4). At least 30 days prior to the first test or commissioning procedure, the owner shall verify the Hayward Executive Airport manager has an adequate supply, as determined by the manager and printed at the owner's expense, of the "fly friendly" document used for pilot education.

(5). At least 30 days prior to the first test or commissioning procedure, the owner shall verify with the Hayward Executive Airport and Metropolitan Oakland International ATCT that the proposed language for the ATIS accurately describes the location of the RCEC and recommendation for avoid overflight below 1000 feet.